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MASTER PLAN

STATE DOCUMENTS

FOR

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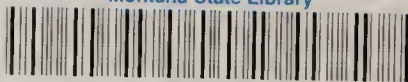
NELSON RESERVOIR

RECREATION AREA

PREPARED FOR - STATE OF MONTANA - DEPT. OF FISH AND GAME

THOMAS. DEAN & HOSKINS INC. PLANNERS - ENGINEERS

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RECREATION MASTER PLAN

NELSON RESERVOIR RECREATION AREA

MONTANA

Prepared for

MONTANA DEPARTMENT OF FISH AND GAME

October 15, 1966

Thomas, Dean & Hoskins, Inc.
Planners & Engineers
Great Falls, Montana

NELSON RESERVOIR RECREATION AREA

The Site

Nelson Reservoir is located in the northeastern portion of Montana, approximately 54 miles west of Glasgow and 16 miles northeast of Malta. The park lies approximately 3 miles north of U. S. Highway 2. The park site located in Section 35, T 32 N, R 23 E, P. M. encompasses 228 acres of open grassland adjacent to the reservoir. The entire topography is gently dipping towards the reservoir. One of the most conspicuous aspects of the Nelson Reservoir site is the lack of overstory vegetation. There are virtually no trees on the site other than a few bushy willows along the lakeshore. Steps have been taken to establish Russian olive, willow, and cottonwood on the site. Survival of these initial plantings has been encouraging; it is expected the planting program will be expanded as indicated in the master plan.

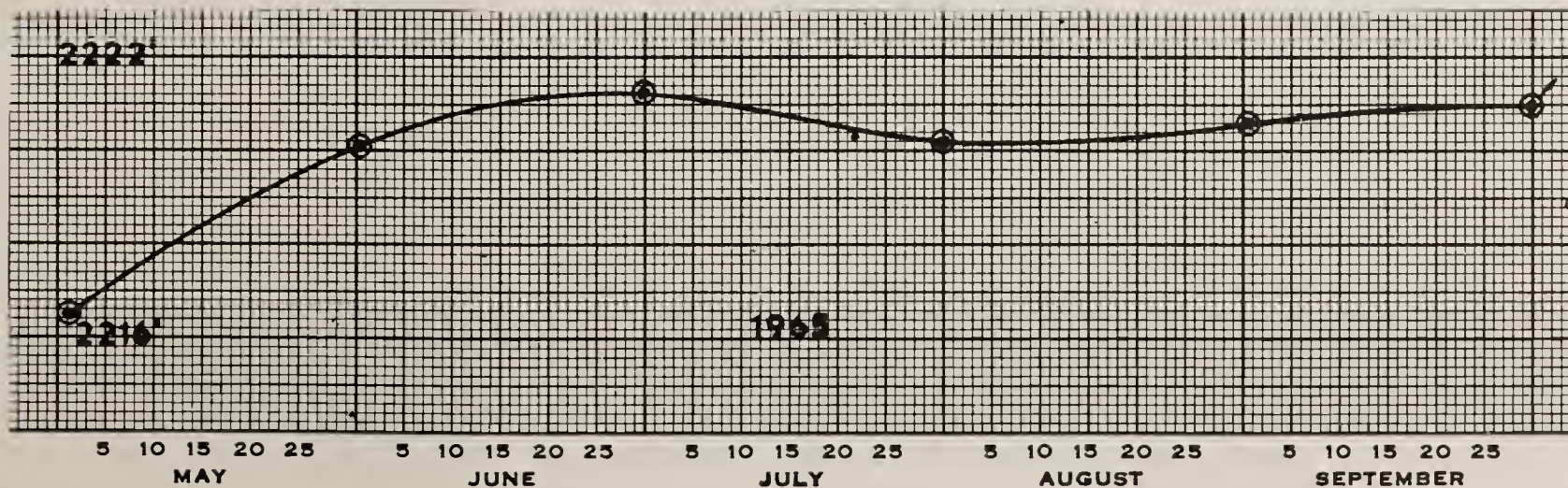
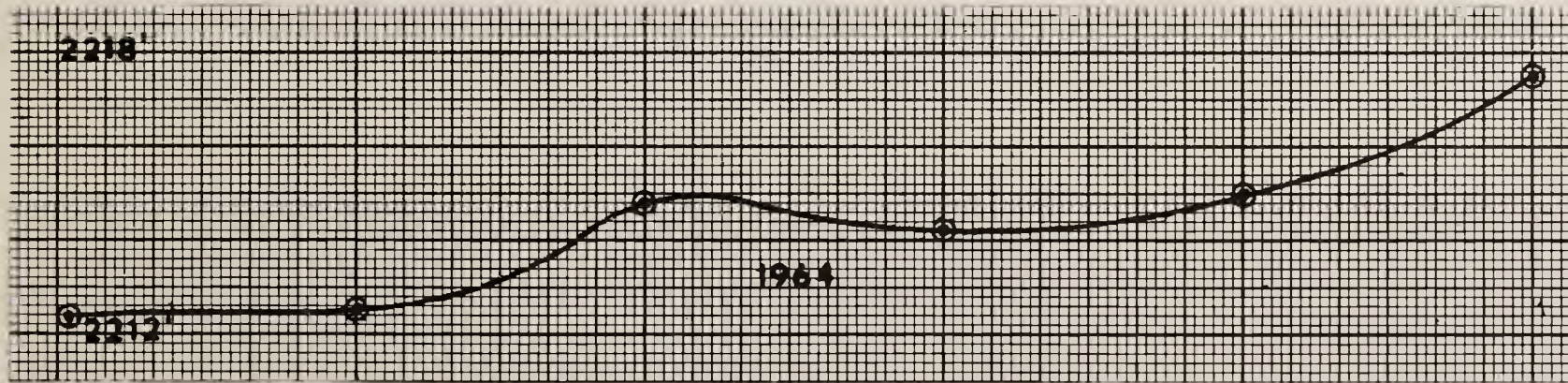
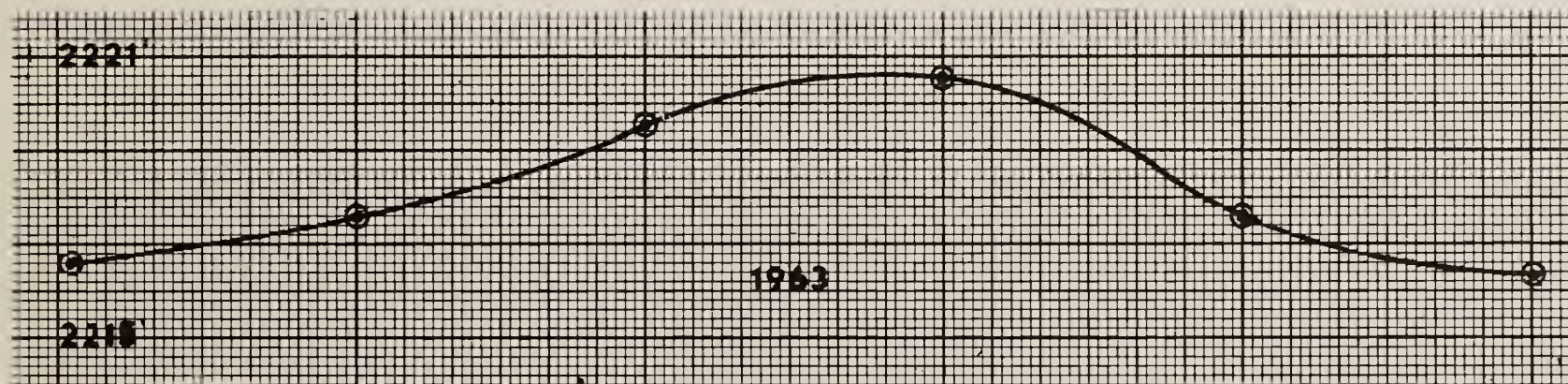
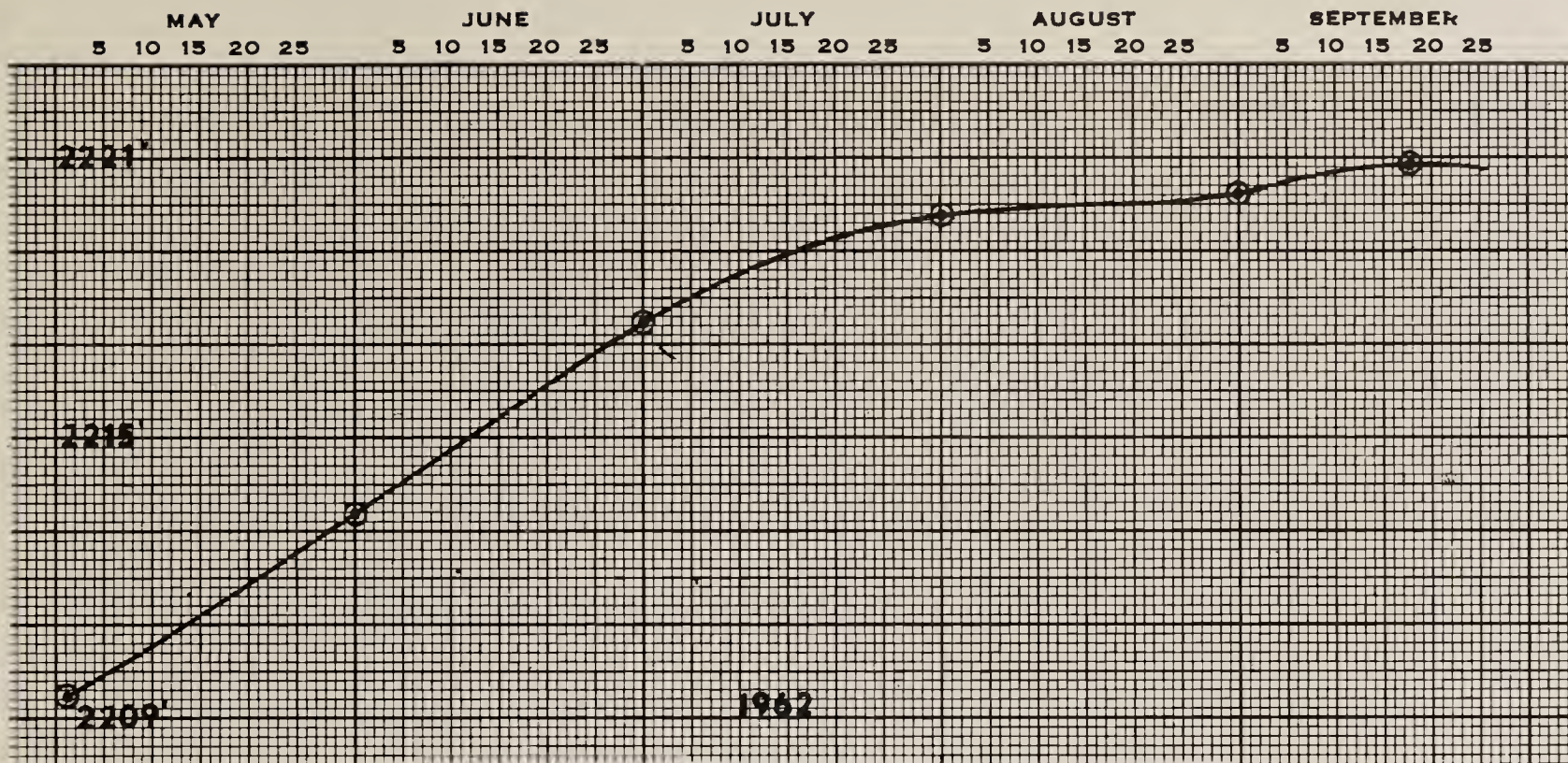
The reservoir is under the jurisdiction of the Bureau of Reclamation. Its primary mission is that of water storage for irrigation purposes. As reservoir fluctuations are a primary consideration in planning for water oriented activities, a hydrograph is presented in Figure 1.

The U. S. Bureau of Reclamation presents the following reservoir data in its general development plan.

1. Average maximum water level during the recreation season is 2,214.7.
2. Average minimum water level during the recreation season is 2,213.4.
3. The average drawdown approximates 1.3 feet. This average fluctuation will have little effect on the anticipated facilities. However, greater

Hydrographs for Nelson Reservoir Recreation Seasons 1962-1965

Water Elevation - feet



fluctuation would have considerable effect because of the shallow off-shore waters.

Elements of the Park

Visitors to the park will be of the two distinct user groups, the enroute tourist, and the local recreationist. Provisions for each of these groups must be considered, and integrated in such a manner as to provide particular land units for all possible uses. The compatibility (and incompatibility) of these particular land uses are the key to park design. The compatibility component must be related to both the user and the site, and between competing uses of visitor groups. If the relationship between competing user groups is incompatible separation of the inharmonious groups is required. In planning the development at Nelson Reservoir a variety of distinct user types has been recognized they are as follows:

1. Picnickers
2. Campers
3. Boaters
4. Swimmers
5. Fishermen

Provisions for each of these user groups are provided for in the plan. In all cases user needs were weighed against site characteristics in an effort to relate each group with the most compatible site.

DESIGN ANALYSIS

General

The primary attraction of the Nelson Reservoir Recreation Area is the



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reservoir itself. The scarcity of natural lakes in the area, augments the demand for recreation on or near reservoirs. It can be expected that the bulk of the activity will occur within 400 feet of the reservoir. Anticipating this desire to be close to water, the major developments in the master plan are all placed within reasonable proximity of the reservoir. In all cases a buffer strip of 200 feet was provided along the shoreline to enable the free movement of fishermen and hikers along the shoreline without intruding upon individual family units.

Generally speaking, the overall design separates day-use from overnight use, and provides for individual user groups within each of these broader classifications.

Picnic Area

The picnic area is located to the right of the main entrance road. Major traffic along this road will be for either picnicking or boating. A large area has been reserved for picnicking activity. The toilets are centrally located and above the general activity area.

As wind and the lack of shade will be an annoying problem to picnickers, an extensive planting program should be undertaken. Several shelters are designated for the area, to provide shade and protection from the wind and rain.

Swimming Area

A swimming beach is proposed between the picnic area and the campground. It is expected that this facility will be utilized by both picnickers and campers. Shelterbelt planting in the form of a wide "V" surround the area providing for user separation and relative privacy for sunbathers. Presently the area between the plantings is low and wet. It is anticipated that this area will be filled

and graded toward the surrounding shelterbelt. The beach is composed of large sized gravel; development will include the addition of pea gravel and sand cover in the shallow water and a sand beach along the shore. A log boom or other demarkation delineating shallow and deep water should be provided.

Campground

The campground area is to the left of the main entrance road. This area is composed of a one-way road system in a cul-de-sac design. A comfort station will be located in the center of each loop. Individual parking spaces should be provided to minimize site damage. As the entire site is open and unobstructed, vehicle barriers will be necessary. It is likely that most of the road pioneering will occur toward the reservoir. Therefore, priority should be given to traffic control devices on the northeast side of the road.

Trailer Campground

The trailer area is independent of other facilities. The design of the trailer area was largely dictated by the topography of the site. The loop design generally follows the outline of a narrow flat area at this location. Campfire circles have been placed near the lakeshore for evening campfire talks and group activities. The utility design anticipates water hydrants for each of the individual trailer spaces. Although the plan does not indicate electrical outlets at each space, this added service could easily be undertaken. As in the tent camping area, all roads are one-way circulating to the right with intermediate exists to the left.

Although the master plan does not delineate spurs or pull-outs, it is

assumed that these will be provided. Such provisions tend to develop the integrity of each unit, making it easier for people to do what is right in the management sense. Placement of the spurs will depend on the minute details of topography. However, in general they should be placed from 75 to 100 feet apart. Extreme care should be taken to avoid excessive cuts and fills in the placement of spaces.

Boat Ramp

The boat ramp occupies the extreme northern portion of the park. The site is clear of off-shore vegetation and has the best shoreline grade for development. Parking is provided immediately off the ramp to the southeast. Expansion of the parking facility should be undertaken to the southeast rather than intruding on the picnic area.

PHASE CONSTRUCTION

General

The development of Nelson Reservoir Recreation Area will be completed in two principal phases. These phases primarily represent the completion of the basic facilities, it is expected that further developments will occur, such as changehouse facilities, modernized comfort stations, entrance facilities.

Phase 1

Principal priority of development at Nelson Reservoir is given to the development of the boat ramp, the picnic area and the campground.

The establishment of shade trees is considered paramount at this time. Plantings should be undertaken on all drainages. In general, this will result in the expansion of the existing planted areas. Water utilities and electrification should also be accomplished during this phase.

Phase 2

Phase 2 involves the construction of the trailer camping area, expansion of the utilities system and general improvements throughout. The timing of this phase should be carefully coordinated and visitor use surveys taken in the existing area. As the park is of the size and quality to warrant entrance fees, it is recommended that entrance facilities be constructed at this time.

PARK CAPACITY

Park capacities are dependent on the density standards adapted by the individual agency. The general guidelines used for estimating developed capacity

of this plan are those used by the Bureau of Outdoor Recreation in the Missouri River Basin. The Nelson Reservoir Recreation Area contains a favorable amount of reserve acreage for future expansion. The figures presented in this plan are calculated on the basis of the proposed development as outlined on the master plan.

Suggested Density Standards.

Picnicking: 8 units/acre (4 persons/F.U.)
Tent Camping: 4 family units/acre (4 persons/F.U.)
Trailer Campers: 4 units/acre (4 persons/F.U.)
Swimming Beach: 75 S.F./user
Parking: 30 spaces/100 persons

Picnic Area Capacity and Quantity Needs

Family Picnicking

3 Acres @ 8 F.U./acre = 24 Family Units

Quantities

Tables 29 (20% of units 2 tables/fireplace)
Fire grills 24
Trash cans 1/3 units 8

Comfort Station

1 toilet/50-150 persons = One double unit Comfort Station

Parking Needs

Parking need for picnickers: 30 spaces-total in plan 46
Additional parking for shoreline fishermen and bathers

Swimming Beach Capacities and Needs

Available Area: 15,000 S.F. @ 75 S.F./user = 200 users

Needs:

1 Changehouse
4 Trash Cans

Camping Area Capacity and Quantity Needs

Tent Area

5.5 Acres @ 4 F.U./acre = 22 units

4 persons/F.U. = 88 persons

Trailer Area

5 Acres @ 4 F.U./acre = 20 units

4 persons/F.U. = 80 persons

Quantities

1 Table, 1 fireplace, 1 trash can/ family unit

1 Parking spur/family unit

(Approximately 207.4 spurs to be designed to carry two vehicles)

1 toilet per 5-10 family units

Boat Ramp

Sheet



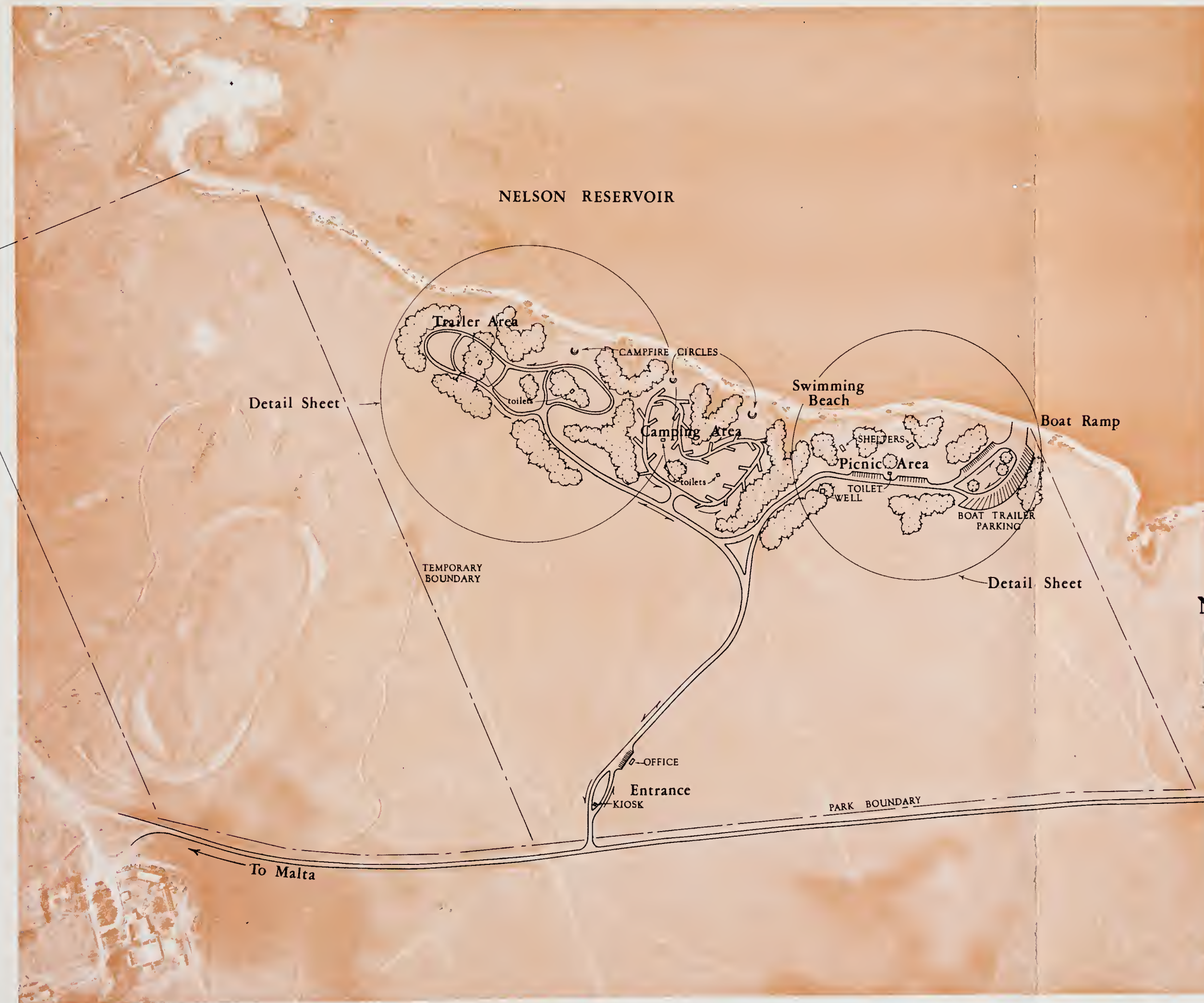
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RECREATION AREA

MASTER PLAN

	SHEET NO.
SHEETS	



REVISIONS BY _____ DATE _____ DESCR _____ BY _____ DATE _____ DESCR _____ BY _____ DATE _____ DESCR _____			DATE <u>August, 1966</u> DRAWN <u>J.F.G.</u> JOB NO. <u>2534</u> DESIGNED <u>J.E.A.</u> F.B. NO. _____ SCALE _____ APPROVED <u>H.P.H.</u> FILE NO. _____	THOMAS, DEAN & HOSKINS INC. ENGINEERING CONSULTANTS GREAT FALLS, MONTANA	NELSON RESERVOIR RECREATION AREA	MASTER PLAN	SHEET NO. _____ SHEETS _____
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REVISIONS		
BY	DATE	DESCR
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DATE	August, 1966	DRAWN	J.E.G.	JOB NO.	2534
		DESIGNED	J.C.A.	P. S. NO.	
SCALE		APPROVED	H.P.H.	FILE NO.	

THOMAS, DEAN & HOSKINS INC.	
ENGINEERING CONSULTANTS	GREAT FALLS, MONTANA

NELSON RESERVOIR RECREATION AREA

DETAIL	SHEET NO.

